

REMARKS

The Final Official Action dated January 15, 2003, has been received and its contents carefully noted. The shortened statutory period for response is April 15, 2003. Accordingly, the Applicants respectfully submit that this response is being timely filed.

Claims 1-76 were pending in the present application prior to the above amendment. Claims 28, 29, 41, 42, 54 and 55 have been amended and new claims 77-80 have been added for clarity. As these features have already been considered, it is not believed that the amendments raise any new issues that would require further consideration or search and thus are believed to be appropriate for entry after final. Accordingly, claims 1-80 are now pending in the present application, of which claims 1, 10, 19, 32, 45 and 68 are independent. For the reasons set forth in detail below, the claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Applicants note with appreciation the consideration of the Information Disclosure Statements filed on June 2, 1999, March 31, 2000, June 21, 2000, July 30, 2001, February 15, 2002, April 18, 2002 and October 28, 2002. However, the Applicants have not received acknowledgment of the Information Disclosure Statements filed on November 21, 2002, and January 3, 2003. Applicants respectfully request that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of these Information Disclosure Statements.

Paragraph 2 of the Official Action rejects claims 1-76 under 35 U.S.C. § 112, second paragraph, asserting that "substantially" is indefinite (p. 2, Paper No. 25). In response, dependent claims 28, 29, 41, 42, 54 and 55 have been amended and new claims 77-80 have been added to further clarify the mobility of the semiconductor film of the present invention. It is respectfully submitted that the term "substantially" is definite in view of the general guidelines contained in the specification. The specification of the present invention teaches that a semiconductor film having substantially no grain boundaries means that energy bands of clusters are connected through Si-Si bonds

anchoring the clusters at interfaces therebetween, and that carrier mobility is on the order of 15 to 300 cm²/Vsec (electron mobility) and 10 to 300 cm²/Vsec (hole mobility) (see p. 14, line 31 to p. 15, line 7). Therefore, a semiconductor film which has substantially no grain boundaries appears to be properly defined both in the specification and in the claims. The Applicants respectfully submit that claims 1-76 are definite. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112 is in order and respectfully requested.

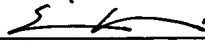
Paragraph 4 of the Official Action rejects claims 1-76 as anticipated by JP 02-234134 to Sumiyoshi et al. The Applicants respectfully submit that an anticipation rejection cannot be maintained against the independent claims of the present invention. Sumiyoshi does not teach all the elements of the independent claims, either explicitly or inherently. The independent claims recite that a semiconductor layer of a TFT has substantially no grain boundaries. The Official Action asserts that since a "semiconductor layer having 'substantially' no grain boundaries still has grain boundaries" that "the polysilicon film of Sumiyoshi still reads on the applicant's claims" (p. 3, Paper No. 25). This assertion ignores the teachings of the specification of the present invention.

As noted above, the specification of the present invention teaches that a semiconductor film having substantially no grain boundaries means that energy bands of clusters are connected through Si-Si bonds anchoring the clusters at interfaces therebetween. No such teaching is found in Sumiyoshi. Further, as noted in the specification, "the polycrystalline (semi-amorphous or semi-crystalline) structure of silicon in accordance with the present invention is entirely different than usual polycrystals in which grain boundaries provide barriers against carrier transportation" (pp. 14-15). Sumiyoshi may teach a usual polycrystalline structure, but it is not clear how Sumiyoshi teaches that a semiconductor layer of a TFT has substantially no grain boundaries. Since Sumiyoshi does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(e) is in order and respectfully requested.

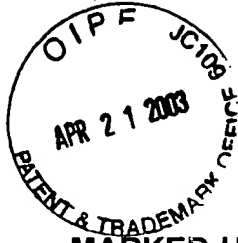
Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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MARKED-UP VERSION OF THE AMENDED CLAIMS

28. (Amended) A device according to claim 19 wherein said [crystalline] semiconductor layer has an electron mobility [not lower than] of 15 to 300 cm²/Vsec.

29. (Amended) A device according to claim 19 wherein said [crystalline] semiconductor layer has a hole mobility [not lower than] of 10 to 200 cm²/Vsec.

41. (Amended) A device according to claim 32 wherein said [crystalline] semiconductor layer has an electron mobility [not lower than] of 15 to 300 cm²/Vsec.

42. (Amended) A device according to claim 32 wherein said [crystalline] semiconductor layer has a hole mobility [not lower than] of 10 to 200 cm²/Vsec.

54. (Amended) A device according to claim 45 wherein said [crystalline] semiconductor layer has an electron mobility [not lower than] of 15 to 300 cm²/Vsec.

55. (Amended) A device according to claim 45 wherein said [crystalline] semiconductor layer has a hole mobility [not lower than] of 10 to 200 cm²/Vsec.

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